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Research Article

RESEARCH ABOUT THE FIXATION OF THE PLANNING PRINCIPLES OF KARAGÖL AND ITS SURROUNDINGS RELATED WITH THE PLAIN AND GREEN FIELD SYSTEM OF ANKARA CITY

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ABSTRACT. This research was realized to fix the planning principles under the consideration of the protection and land use balance by determining natural potential of Karagöl and its surroundings which is the little wonder of nature near Ankara City. Thestudy for the research area was formed of three stages. At the first stage, natural resources of the area were determined and evaluated. At the second stage, little inquiries were done directed to the potential determination and the visitor demands of Ankara City and Karagöl. At the third stage, land use suggestions for the research area were fixed under the light of the data obtained from the first and second stages. As a result of these studies, Karagöl was offered to be planned as natural protection area.

Keywords: *Karagöl, Nature, Protection.*

IMPORTANCE:

People of Ankara feel the desire to escape to rural areas on weekends to get rid of the monotonous and noisy city atmosphere and to rest. Especially after the pandemic, the need for open spaces has increased. The need for recreation requires an open-air organization in the surrounding area, planning of areas for leisure and recreation.

When the recreational potential of Karagöl is used well, it will provide opportunities such as camping, photography, fishing, picnicking, working on nature, mental rest, and various sports activities. In addition, it will provide opportunities for various activities for the people of Ankara, who are in social isolation after the Covid 19 pandemic and can also be used as assembly areas after the earthquake. It can be transferred to future generations with the balance of protection-use

Karagöl is a small and deep crater lake. It has a rich flora and fauna. In our study, Karagöl and its immediate surroundings were examined, its recreational potential and carrying capacity were identified, and planning principles were determined in the balance of protection-use [4].

INTRODUCTION:

Karagöl, which is a small natural wonder with its natural flora and fauna, must be protected and natural resources must be used consciously to transfer to the future generations. Karagöl and its immediate surroundings will be considered as a recreation planning area. The city of Ankara will be evaluated as a part of the recreation system.

Principles and plan decisions aiming at the use of multi-dimensional space will be determined by identifying the potential with natural and cultural data. The balance of protection and use will be considered [3].

MATERIALS AND METHOD

Karagöl, a natural crater lake located in the northwest of Çubuk Township in the north of Ankara, and its immediate surroundings were selected as the research area.

In the research, a method was applied to determine the areas that need to be protected and areas with recreational potential. For this purpose, with the help of the topographic map transferred to the computer environment; slope and aspect maps; a current land use map was prepared that is showing the forest and open space boundaries. As a result of overlapping the forest and open area boundaries, the land use and planning principles were determined [1].

RESEARCH FINDINGS

The water of Karagöl at 1500 m elevation, which covers an area of approximately 2 hectares, is fresh. It is 150 meters long and 30 meters wide. Due to the presence of a shale layer at the bottom, heavy snowfall in winter causes groundwater to form. The lake, which is effective in the formation of the microclimate in the region, is a tectonic lake according to some researchers. The fact that the lake is at the base of an inverted cone-shaped structure and the presence of andesite rocks in the surrounding gives the idea of being a crater lake. [1] [6]

Climate:

It can be said that a special climate type is formed in the area as it is located on the transition zone of two regions that are different in terms of vegetation and climate. In terms of precipitation, it is one of the points that receive the most precipitation in Central Anatolia, but this value is below the precipitation value in the Black Sea Region. A similar situation is also observed in terms of temperature, it has a milder climate than the continental climate. However, a more continental climate type is observed than the climate of the Black Sea Region. [3] [2]

Flora:

Karagöl is a very interesting vegetation example for scientists. The quality and density of the vegetation of Karagöl and its surroundings has a unique value. The lake in the shape of a wide inverted cone is covered with dense forest trees. The eastern and southern slopes are covered with steppe plants, the northern and western slopes are covered with scotch pine forests. Most of the forest trees in the microclimate area around the lake are typical plants of the Euro-Siberian Region that are seen mostly in the northern part of Turkey [4]. (Fig 1) [2].



Fig. 1. *It has a very good potential in terms of recreational opportunities [6] [2]).*

Fauna:

There are various aquatic animals such as trout, carp, barbell, freshwater mussels, crabs, frogs and turtles. Besides, there are various predatory species such as foxes and wolves and runner animals such as rabbits in the central and southern parts of the province. From the forested areas in the north to the steppes in the south, there are hedgehogs, moles, field mice, field squirrels, jackals, bears, pigs, wild goats and deer breeds. There are various birds such as partridge, bustard, crane, woodcock, pigeon, turtledove, quail and migratory birds that stays for a certain period of time in their seasons. Hawks, falcons and eagles can be found in steppe areas [3] [2].

THE REASONS OF DETERIORATION OF THE NATURAL STRUCTURE OF KARAGOL

The animal population, which is very limited in the Ankara region, are hunted, their nests and the natural environment they live in is destroyed in various ways. There is no wildlife protection area in Ankara and its surroundings where natural conditions are not deteriorated. [3]

DISCUSSION AND RECOMMENDATIONS

1. Karagöl, which has interesting ecological and floristic features, was accepted as a 'Nature Conservation Area' in accordance with Article 4 of the National Parks Law No. 19309 and was registered as a 'Nature Park'. 114.38 ha. The area of Karagöl was registered as a Nature Park on 11.07.2011. [6]

2. Karagöl provides an environment for studies on plants and plant communities for all researchers. As an open-air museum of nature, Karagöl should be opened to nature lovers, students, and scouts in a controlled manner. Tags should be hanged on the plants in the forest to introduce plants to visitors [2]

3. It is necessary to maintain the plants in the area at regular intervals. It would be beneficial for specialists to be appointed by the Ministry of Forestry to go to the area at least once a month and carry out maintenance works such as keeping the vegetation under control, cutting the deteriorated, drying, and diseased plants.

4. In summer, a significant decrease seen at the lake water level. Necessary measures should be taken to increase the amount. In order to maintain the lake water level in normal condition and to ensure water circulation, water should be brought to the lake from the surrounding sources.

5. The maximum visitor capacity to be targeted in the planning should not be more than the "carrying capacity" of the areas to be opened for recreational use. Carrying capacity, which is defined as the limit of an ecosystem to withstand user pressures without losing its qualities, is important in landscape planning in terms of ensuring the balance between the maximum capacity that the recreational area can handle and the target capacity [5].

6. It is difficult to suggest an exact carrying capacity that would be valid for Karagöl in our country's conditions. However, based on the basic principles on which the carrying capacity is based and the values given above, a carrying capacity of 50-80 Person/day per 1 ha can be suggested for Karagöl. According to these values, the carrying capacity of the picnic area around the lake, which was determined as approximately 24.000 m2 in the proposal plan, will be maximum 192 and minimum 120 people for one day. [1]

7. When the carrying capacity is complied with, the preconditions for the long-term and safe use of the service areas will be created, and the natural environmental quality will be preserved at a certain level.

8. If protection is to be graded; Areas that fall within the forest boundaries in the Land Use Plan should be allocated as 1st Degree Protection Area and in open areas as 2nd Degree Protection Area. Only the open area around the lake should be reserved as a picnic area, and the 1st Degree Conservation Area should be reserved as a "Scientific Research and Education Area" aimed at instilling scientific research, education and love of nature. Barbecue and fire should be banned. [1]

9. The maximum visitor capacity to be targeted in the planning should not be more than the "carrying capacity" of the areas to be opened for recreational use (Fig 2). [1]

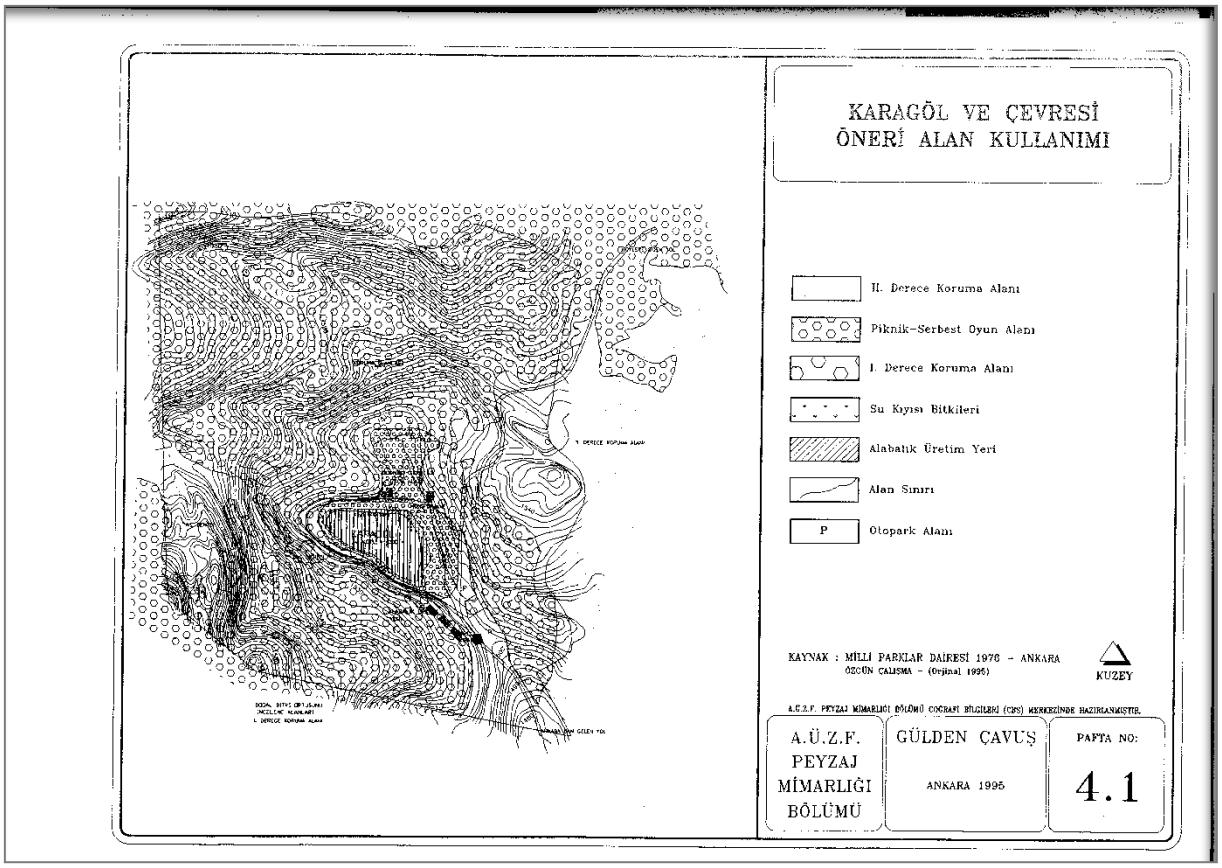


Fig. 2. *Karagöl and its surroundings recommended area use [1]*

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